

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
7 July 2005 (07.07.2005)

PCT

(10) International Publication Number
WO 2005/062361 A1

(51) International Patent Classification⁷: H01L 21/3065

(71) Applicant (for all designated States except US): ADAPTIVE PLASMA TECHNOLOGY CORPORATION [KR/KR]; 1 Yeongtong-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 443-808 (KR).

(21) International Application Number:

PCT/KR2004/003388

(22) International Filing Date:

22 December 2004 (22.12.2004)

(72) Inventors; and

(25) Filing Language:

Korean

(75) Inventors/Applicants (for US only): SONG, Yeong Su [KR/KR]; 101-1205 Sinhan Apt., Sinha 6-ri, Bubal-eup, Icheon-si, Gyeonggi-do 467-863 (KR). OH, Sang Ryong [KR/KR]; 946-1107 Lotte Apt., Yeongtong-dong, Paldal-gu, Suwon-si, Gyeonggi-do 442-470 (KR). KIM, Sheung Ki [KR/KR]; 1106-1101 Imaechon Samhwan Apt., Imae-dong, Bundang-gu, Seongnam-si, Gyeonggi-do 463-902 (KR). KIM, Nam Heon [KR/KR]; 804-302 Byeokjeokgol Dusan Apt., 973-3 Yeongtong-dong, Paldal-gu, Suwon-si, Gyeonggi-do 442-470 (KR). OH, Young kun [KR/KR]; 123-502 Daelim Apt., Haengdang-dong, Seongdong-gu, Seoul 133-070 (KR). LEE, Do Hyung [US/KR]; APTC Co., Ltd., 2nd Floor Sun Technoville, 5-27 Mangpo-dong, Paldal-gu, Suwon-si, Gyeonggi-do 442-400 (KR).

(26) Publication Language:

English

(30) Priority Data:

10-2003-0094413

22 December 2003 (22.12.2003) KR

10-2003-0095570

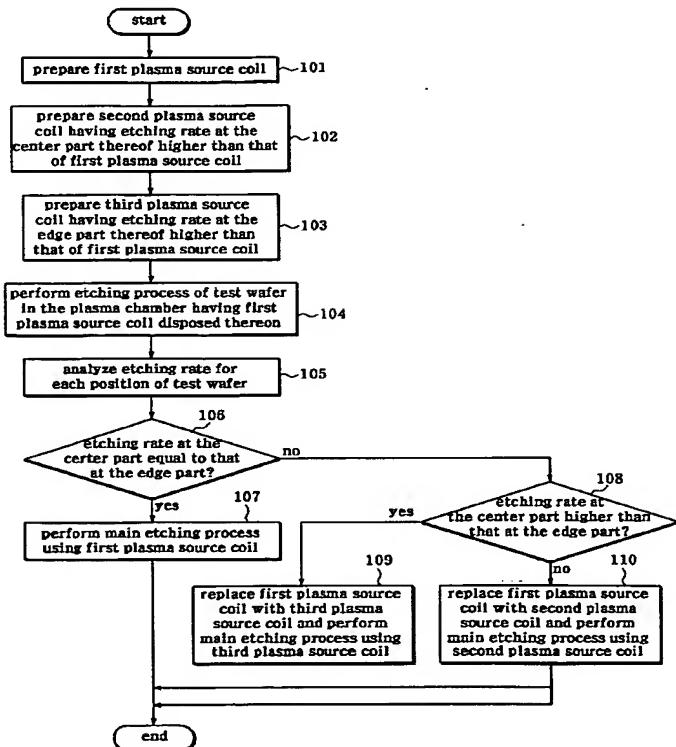
23 December 2003 (23.12.2003) KR

10-2003-0095523

23 December 2003 (23.12.2003) KR

[Continued on next page]

(54) Title: METHOD FOR SETTING PLASMA CHAMBER HAVING AN ADAPTIVE PLASMA SOURCE, PLASMA ETCHING METHOD USING THE SAME AND MANUFACTURING METHOD FOR ADAPTIVE PLASMA SOURCE



(57) Abstract: Disclosed herein is a plasma chamber setting method for generating plasma in a plasma chamber. A plurality of plasma source coils, including a first plasma source coil, a second plasma source coil having an etching rate at the center part thereof higher than that of the first plasma source coil, and a third plasma source coil having an etching rate at the edge part thereof higher than that of the first plasma source coil, are prepared. The first plasma source coil is disposed on the plasma chamber, and a test wafer is etched. The etching rate for each position of the test wafer is analyzed, and first plasma source coil is replaced with the second plasma source coil or the third plasma source coil based on the analysis results.

WO 2005/062361 A1



(74) Agent: AJU PATENT & LAW FIRM; 12th Floor, Poonglim Building, 823-1 Yeoksam-dong, Kangnam-gu, Seoul 135-784 (KR).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EB, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH,

GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.